

TOWN OF DAVIE

TOWN COUNCIL AGENDA REPORT

TO: Mayor and Councilmembers

FROM/PHONE: Gary Shimun, Town Administrator / 797-1030

PREPARED BY: Phillip R. Holste, CFM, Program Manager / 797-1041

SUBJECT: Resolution

AFFECTED DISTRICT: 2

TITLE OF AGENDA ITEM: A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, AUTHORIZING THE MAYOR TO EXECUTE A LEASE AMENDMENT TO AN EXISTING LEASE AGREEMENT BETWEEN THE TOWN OF DAVIE AND AMERICAN TOWER CONCERNING THE MONOPOLE TELECOMMUNICATIONS TOWER LOCATED AT 6911 ORANGE DRIVE; AND PROVIDING FOR AN EFFECTIVE DATE.

REPORT IN BRIEF: On November 19, 1997, the Town signed an agreement (R97-406) with Omnipoint Communication DEF Operation, Incorporated to lease space for a monopole cellular tower at the Public Works Compound, 6911 Orange Drive. Subsequently, Omnipoint was purchased by American Tower Delaware Corporation. This initial agreement allowed two additional co-locations on the monopole and stated that the Town would receive 50% of co-location revenue.

The proposed first amendment provides for the placement of a third co-location or fourth carrier on the tower. It also leases an additional 192 square feet of ground space to American Tower and grants permission to the addition of MetroPCS to the existing monopole. The Engineering and Building divisions reviewed and accepted the structural analysis provided as Exhibit C of the third amendment. At this time, American Tower does not have a signed agreement with MetroPCS. Therefore, this amendment gives the Town Council final approval of any collocation agreement between American Tower and any future carrier.

PREVIOUS ACTIONS: R97-406 (Original Lease Agreement)

CONCURRENCES: Not Applicable

FISCAL IMPACT: Yes

Has request been budgeted? n/a

Additional Comments: The Town will receive 50% of co-location revenue.

RECOMMENDATION(S): Motion to approve the resolution

Attachment(s): Resolution, First amendment to lease agreement

RESOLUTION _____

A RESOLUTION OF THE TOWN OF DAVIE, FLORIDA, AUTHORIZING THE MAYOR TO EXECUTE A LEASE AMENDMENT TO AN EXISTING LEASE AGREEMENT BETWEEN THE TOWN OF DAVIE AND AMERICAN TOWER CONCERNING THE MONOPOLE TELECOMMUNICATIONS TOWER LOCATED AT 6911 ORANGE DRIVE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, LESSOR and OMNIPOINT entered into that certain Lease Agreement (“Agreement” dated November 19, 1997, which by this reference is incorporated herein and made a part hereof, whereby LESSOR leased to OMNIPOINT that certain real property in Broward County, Florida, located at 6911 Orange Drive, Davie, FL, more specifically described in and substantially shown as outlined on Exhibit “A” attached hereto and made a part hereof (“Property”); and

WHEREAS, American Tower has requested an amendment to the lease to allow four (4) carriers on the tower and an additional 192 feet of ground space; and

WHEREAS, an engineer licensed in the State of Florida has certified that the existing tower has sufficient loading capacity for the additional antenna; and

WHEREAS, there is sufficient loading capacity on the tower, and the addition of a fourth antenna is consistent with the goal of collocation on towers to reduce the number of towers.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA.

SECTION 1. That the recitals set forth above are true and correct and are made a part of this resolution.

SECTION 2. The Town Council of the Town of Davie hereby approves the aforementioned amendment and authorizes the Mayor to execute the proposed third amendment, a copy of which is attached as Exhibit “A”, on behalf of the Town.

SECTION 3. This resolution shall take effect immediately upon its passage and adoption.

PASSED AND ADOPTED THIS _____ DAY OF _____, 2007.

MAYOR/COUNCILMEMBER

ATTEST:

TOWN CLERK

APPROVED THIS _____ DAY OF _____, 2007

**FIRST AMENDMENT TO
LEASE**

THIS FIRST AMENDMENT TO LEASE ("First Amendment") is entered into on the _____ day of _____, 2007, by and between **Town of Davie**, a municipal corporation of the State of Florida (hereinafter referred to as "Lessor") and **Unisite/Omnipoint FL Tower Venture, LLC**, a Delaware corporation, its successors and/or assigns (hereinafter referred to as "Lessee").

WITNESSETH:

WHEREAS, Lessor and Omnipoint Communications DEF Operations, Inc. predecessor-in-interest to Lessee, executed and entered into that certain Lease Agreement dated November 19, 1997 (the "Lease"), for the purpose of installing, operating and maintaining a communications facility and other improvements on the Site (as described in Exhibit A attached hereto and incorporated by reference herein); and

WHEREAS, Lessor and Lessee desire to amend certain provisions in the Lease.

NOW, THEREFORE, in consideration of the mutual covenants and promises contained in this First Amendment, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the parties, Lessor and Lessee hereby agree and contract as follows:

1. Lessor hereby leases to Lessee an additional 192 square feet contiguous to the leased area as set forth on Exhibit B attached hereto and incorporated by reference herein. Lessor agrees to cooperate with Lessee as necessary to obtain appropriate zoning, permitting and government approvals. This shall include, but is not limited to, additional uses of Lessor's property as needed to meet any jurisdictional fall zone and other tower related stipulations. If Lessee ceases use of this additional ground space, said space shall revert back to Lessor. Lessee shall have a period of six (6) months to place another wireless carrier within this space prior to the space reverting back to the use of Lessor. Upon the end of said six (6) month period, Lessor shall notify Lessee in writing that it intends to resume use of this area. Any consideration due to Lessor as a result of lease of this space shall cease as of the effective termination date of any tenant agreement applicable to use of said space.
2. Pursuant to the terms of the Lease, as consideration for use of the additional ground space comprised of 192 square feet contiguous to the leased area, Lessee shall pay to Lessor fifty percent (50%) of the gross receipts derived from adding additional tenants to the tower site by utilizing this area. Additionally, Lessee hereby agrees to provide to Lessor, upon request, copies of any tenant agreements for the telecommunications facility as they are directly related to their proportionate share of the revenue received by Lessee. Lessee hereby acknowledges that Lessor (specifically the Town Council) is to have final approval with regard to any collocation agreement between Unisite/Omnipoint FL Tower Venture, LLC and any other future carrier and this First Amendment is contingent upon such approval by the Davie Town Council. If at any such time Lessee's use of the additional area shall cease, any revenue due to Lessor shall cease as of the effective date Lessee is no longer receiving rents derived from the use of said space.
3. Pursuant to Paragraph 7 and Paragraph 17 of the Lease, Lessor hereby consents to the addition of another wireless carrier to the tower, Metro PCS, and Lessee hereby affirms that as of the date of this First Amendment Metro PCS's proposed rental rate is to be Two Thousand Four Hundred

and No/Dollars (\$2400.00) per month, of which fifty percent (50%) of the receipt of would benefit Lessor upon the commencement of Metro PCS's sublease taking effect at the Site. If at any time during the term of this Lease Metro PCS's shall cease its tenancy, any revenue due to the Lessor shall be reduced proportionately.

4. The Notice language contained in Paragraph 18 is deleted in its entirety and replaced with: "**Notices.** All notices must be in writing and shall be valid upon receipt when delivered by hand, by nationally recognized courier service, signed receipt requested, or by First Class United States mail, certified, return receipt requested, addressed as follows:

Lessor:

Lessee:

American Tower
10 Presidential Way
Woburn, MA 01801
Attn: Land Management

With a copy to:

American Tower
116 Huntington Ave.
Boston, MA 02116
Attn: Legal

The parties may substitute recipient's names and addresses by giving at least thirty (30) days notice. Rejection or refusal to accept delivery of any notice, or the inability to deliver any notice because of a changed address of which no notice was given, shall be deemed to be receipt of any such notice."

5. Lessor grants to Lessee the right to install and maintain during the Term of this Lease identifying signs or other types of signs required by any governmental authority on or along any access road to the Site, including, if necessary, signs visible from the nearest public street, at locations where an access road diverges, or if an obstruction obscures visibility of the Site and Improvements. Lessee agrees to minimize the size of such signs as reasonably required for readability and compliance with regulations or directives of any governmental authority.
6. Lessor hereby acknowledges receipt, review and acceptance of the structural analysis of the telecommunications facility a copy of which is attached hereto as Exhibit C.
7. Lessee hereby agrees to comply with the current landscaping code of the Town of Davie and to install a proper landscaping buffer around the compound. Lessee additionally agrees to comply with all current zoning requirements.
8. Lessee hereby agrees to make best efforts to ensure that future collocations on the tower will be flush-mounted and they will have their own generator on-site and a contract for fuel delivery in the event of a disaster.
9. Lessor represents and warrants that as of the date of this execution, there are no uncured defaults under the terms of the Lease and that the Lease is in full force and effect.

10. All other terms of the Lease except as may be amended herein, or as may be in conflict with the provisions of this First Amendment, shall be deemed incorporated into this First Amendment.
11. Except as amended herein, all terms, conditions, provisions, covenants and agreements contained in the Lease are hereby ratified and confirmed in their entirety. The terms used herein and not otherwise defined in this First Amendment shall have the same meaning as set forth in the Lease.

[SIGNATURES NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have set their hands and seals on the day first above written.

LESSOR:

WITNESSES:

Town of Davie

By:

Its:

Print Name:

Print Name:

LESSEE:

Unisite/Omnipoint FL Tower Venture, LLC

By: Unisite, LLC, its manager

Jason D. Hirsch

Director, Land Management

Print Name:

Print Name:

ACKNOWLEDGEMENT

LESSOR:

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ (date) by
_____, (name and title of officer) of _____ (state)
_____, a _____
corporation, on behalf of the corporation. He/she is personally known to me or has produced
_____ (type of identification) as identification.

Notary Public

Printed Name: _____

My Commission Expires:

Commission # _____

LESSEE:

COMMONWEALTH OF MASSACHUSETTS)

) ss:

COUNTY OF MIDDLESEX)

Then personally appeared the said, Jason D. Hirsch of Unisite/Omnipoint FL Tower Venture, LLC. as aforesaid, signer and sealer of the foregoing instrument, and acknowledged the same to be his/her free act and deed as Director, Land Management of Unisite/Omnipoint FL Tower Venture, LLC. and the free act and deed of said limited liability company, before me.

Notary Public

My Commission Expires:

[illegible]

BOUNDARY SURVEY

MILLER
A FALCONER, INC. COMPANY

ENGINEERS • PLANNERS
LAND SURVEYORS
ENVIRONMENTAL PROFESSIONALS

1800 N. DOUGLAS ROAD, SUITE 200
PEACOCK POOL, FLORIDA 33061-3928
TEL: 305/486-1100 FAX: 305/486-1101
E-MAIL: info@millersurvey.com

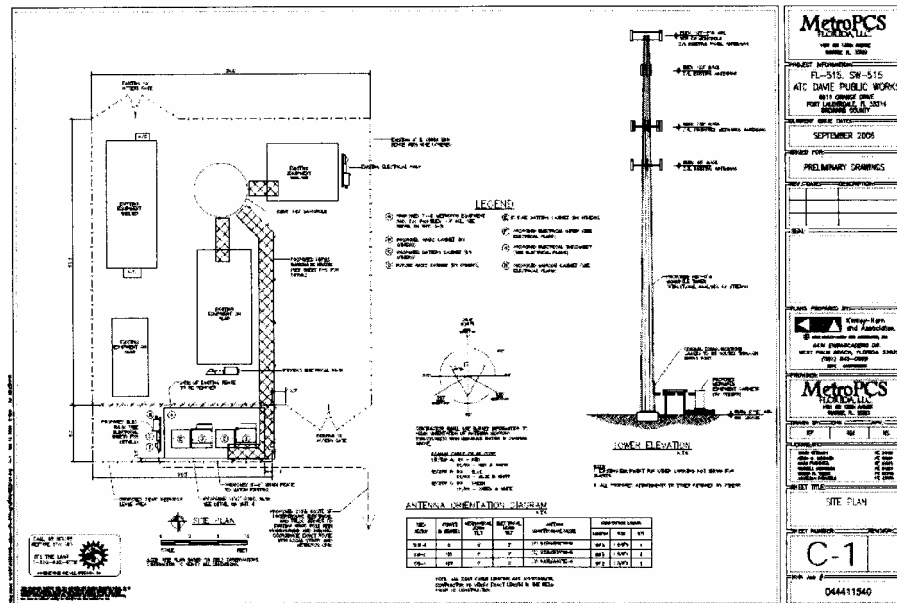
EXHIBIT B

EXHIBIT C

PASSED



AMERICAN TOWER™
C O R P O R A T I O N

Structural Analysis Report

Structure : 138 ft Summit Manufacturing Monopole
ATC Site Name : Davie Public Works, FL
ATC Site Number : 91540
Proposed Carrier : Metro PCS
Carrier Site Name : ATC Davie Public Works
Carrier Site Number : FL515SW515
County : Broward
Eng. Number : 26883421R1
Date : December 5, 2006
Usage : 75.5% (Shaft)

Submitted by:
Ram Kodali, P.E.
Project Engineer

R. Kodali

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900

Reviewed by:
Jaime Reyes, P.E.
Director of Engineering

[Signature]
12/5/06



AMERICAN TOWER™
C O R P O R A T I O N

Structural Analysis Report

Structure : 138 ft Summit Manufacturing Monopole
ATC Site Name : Davie Public Works, FL
ATC Site Number : 91540
Proposed Carrier : Metro PCS
Carrier Site Name : ATC Davie Public Works
Carrier Site Number : FL515SW515
County : Broward
Eng. Number : 26883421R1
Date : December 5, 2006
Usage : 75.5% (Shaft)

Submitted by
Ram Kodali, P.E.
Project Engineer

Reviewed by:
Jaime Reyes, P.E.
Director of Engineering

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 138 ft Summit Manufacturing Monopole located at Davie Public Works, Broward County, FL (ATC site #91540). The tower was originally designed and manufactured by Summit Manufacturing (Drawing #29297-718 dated November 7, 1997). The original design profile is attached for additional information.

Analysis

The tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. A 5% overstress is allowed in the existing structural members to account for program variances.

Basic Wind Speed: 120 mph (Fastest Mile) / 140 (3-Second Gust) per FBC 2004 Code
 Radial Ice: No Ice
 Code: TIA EIA-222-F

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
140.0	12	72.8" x 7.8" x 2" Panels	PLATFORM	(24) 1/5/8	T-Mobile
130.0	6	EMS RR65-18-VDPL2	PLATFORM	(12) 1/5/8	Sprint
95.0	12	MLA Leading 764 Sq.In	ANTENNA MOUNT	(12) 1/5/8	AT&T
	6	Nokia CS72993.07		N/A	
80.0	3	DB844G90VTA-SX	PLATFORM	(3) 7/8	Nextel
	3	DB844H90E-XY		(3) 1/5/8	
	3	EMS RV65-12-00 BL		(3) 1/5/8	

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
105.0	6	Decibel 950G65VTZE-M	(3) T-Arm	(12) 1/5/8	Metro PCS

Install proposed coax inside monopole. All other Coax lines are assumed to be run inside the pole.

Results

The existing 138 ft Summit Manufacturing Monopole with the existing and the proposed antennas is structurally acceptable per TIA/EIA-222-F. The maximum structure usage is 75.5% (Shaft).

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports may not be installed without installation drawings providing the location, size and welding requirements of each port.

To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	4,365.00	4,799.3	110
Shear (kips)	46.50	51.94	111.7

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Conclusion

Based on these analysis results, the structure meets requirements per the TIA/EIA-222-F standard. The tower and foundation can support the existing and proposed antenna and transmission line loading as described in this report.

If you have any questions or require additional information, please call (972) 999-8900.

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

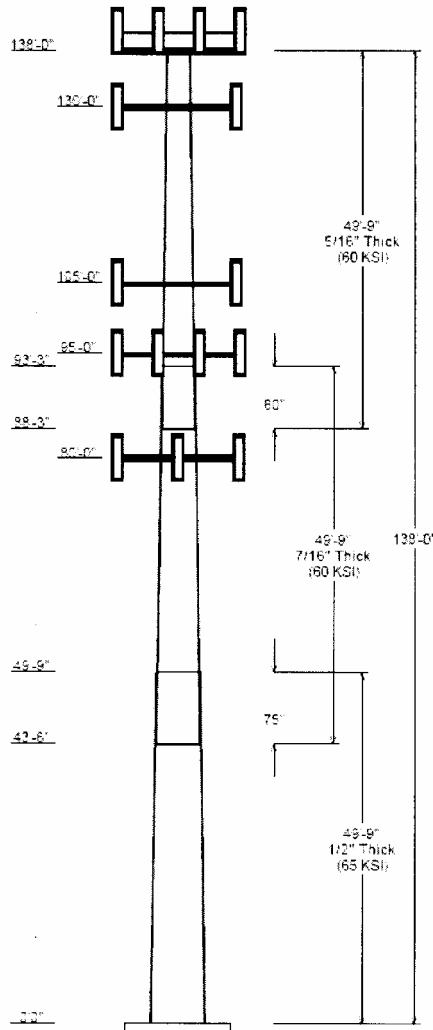
- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Copyright Serrano Engineering Solutions, Inc



Job Information			
Pole :	91540	Code:	TIA/EIA-222 Rev F
Description :	138' Summit Manufacturing Monopole		
Client :	Metro PCS		
Location :	Davie Public Works, FL		
Shape :	18 Sides	Base Elev (ft):	0.00
Height :	138.00 (ft)	Taper:	0.280000(in/ft)

Sections Properties							
Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade (ksi)
		Top	Bottom				
1	49.750	48.21	62.14	0.500		0.000	0.280000 65
2	49.750	36.90	50.83	0.438	Slip Joint	75.000	0.280000 60
3	49.750	25.00	38.93	0.313	Slip Joint	60.000	0.280000 60

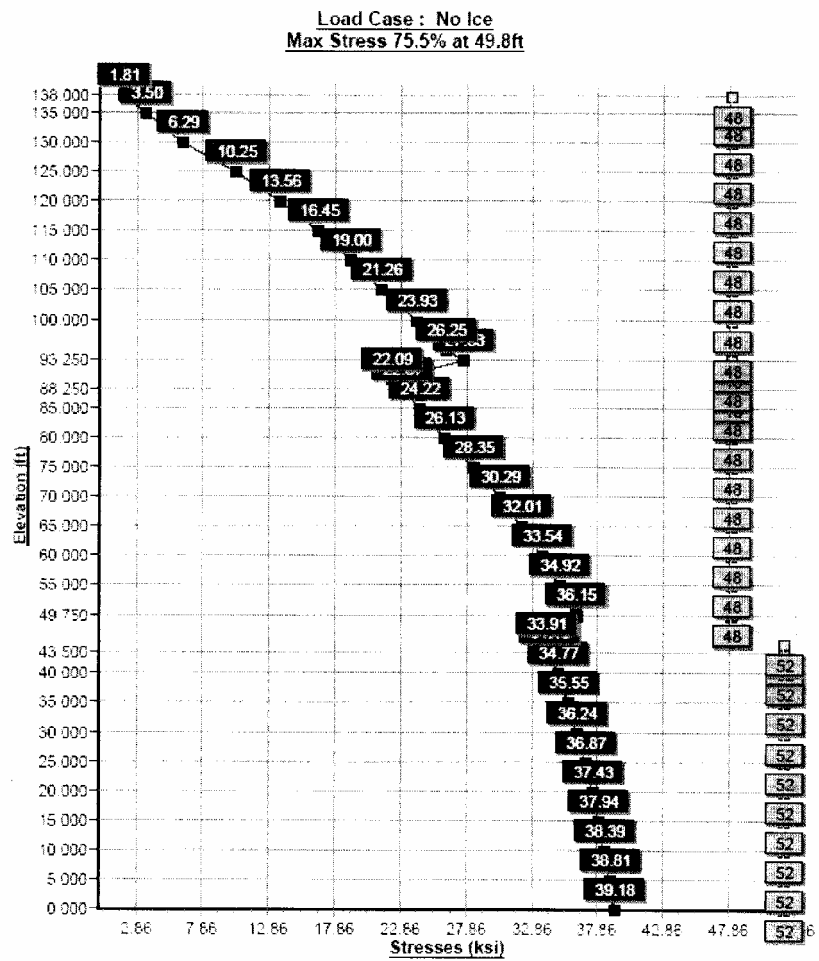
Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
138.000	140.000	12	72.8" x 7.8" x 2" Panels	
138.000	140.000	1	SUMMIT-14FT L P PLATFORM	
130.000	130.000	6	EMS RR65-18-VDPL2	
130.000	130.000	1	PLATFORM	
105.000	105.000	6	Decibel 950G65VTZE-M	
105.000	105.000	3	T-Arm	
95.000	95.000	6	Nokia CS72993.07	
95.000	95.000	12	MLA Loading 764 Sq.In	
95.000	95.000	3	SUMMIT-TRI ANTENNA MOUNT	
80.000	80.000	3	EMS RV65-12-XXDBL	
80.000	80.000	3	DB844H90E-XY	
80.000	80.000	3	DB844G90VTA-SX	
80.000	80.000	1	PLATFORM	

Linear Appurtenance			
Elev (ft)	From	To	Exposed To Wind
0.000	80.000	1 5/8" Coax	No
0.000	80.000	7/8" Coax	No
0.000	95.000	1 5/8" Coax	No
0.000	105.0	1 5/8" Coax	No
0.000	130.0	1 5/8" Coax	No
0.000	138.0	1 5/8" Coax	No

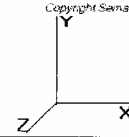
Load Cases	
No Ice	120.00 mph Wind with No Ice
Ice	0.00 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	4799.30	51.94	43.57
Ice	0.00	0.00	50.07
Twist/Sway	833.63	9.02	43.63

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	0.00	0.000	0.000



Pole:	91540	Code:	TIA/EIA-222 Rev F	Copyright Samsan Engineering Solutions, Inc.
Location:	Davie Public Works, FL			12/5/2006 4:56:09 PM
Height:	138.0 (ft)			Page: 1
Shape:	18 Sides			
Base Dia:	62.14 (in)			
Top Dia:	25.00 (in)			
Taper:	0.280000 (in/ft)	Base Elev:	0.000 (ft)	



Shaft Section Properties

Sect Num	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip		Bottom						Top						Taper (in/ft)
					Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	Wt Ratio	Dia Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	Wt Ratio	Dia Ratio	
1	49.750	0.5000	65		0.00	14.688	62.14	0.000	97.82	46957.0	21.56	124.2	48.21	49.75	75.71	21774.1	16.65	96.42	0.28000
2	49.750	0.4375	60	Slip Joint	75.00	10.210	50.83	43.50	69.98	22456.7	20.14	116.1	36.90	93.25	50.64	8508.2	14.52	84.35	0.28000
3	49.750	0.3125	60	Slip Joint	60.00	5.315	38.93	88.25	38.30	7216.6	21.61	124.5	25.00	138.0	24.49	1885.5	13.75	80.00	0.28000
						Shaft Weight	30,213												

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
138.0	72.8" x 7.8" x 2" Panels	12	30.00	5.840	0.75	0.00	0.000	1.00	0.000	2.000
138.0	SUMMIT-14FT L.P. PLATFORM	1	1300.00	35.000	1.00	2100.00	40.000	1.00	0.000	2.000
130.0	EMS RR65-18-VDPL2	6	15.50	4.356	0.75	37.92	4.988	1.00	0.000	0.000
130.0	PLATFORM	1	1200.00	27.000	1.00	1800.00	32.000	1.00	0.000	0.000
105.0	Decibel 950G65VTZE-M	6	10.00	3.993	0.90	33.58	4.684	1.00	0.000	0.000
105.0	T-Arm	3	333.00	6.000	0.75	433.00	8.100	1.00	0.000	0.000
95.00	Nokia CS72993.07	6	20.00	1.230	0.67	45.00	1.420	0.67	0.000	0.000
95.00	M/A Loading 764 Sq.In	12	35.00	7.430	0.75	0.00	0.000	1.00	0.000	0.000
95.00	SUMMIT-TRI ANTENNA MOUNT	3	250.00	5.000	1.00	425.00	7.500	1.00	0.000	0.000
80.00	FMS RV65-12-XXDRH	3	21.00	5.600	0.75	55.48	6.193	1.00	0.000	0.000
80.00	DR844H90F-XY	3	14.00	3.720	1.00	40.30	4.290	1.00	0.000	0.000
80.00	DR844G90VTA-SX	3	11.50	3.030	1.00	38.00	3.480	1.00	0.000	0.000
80.00	PI PLATFORM	1	1200.00	27.000	1.00	1800.00	32.000	1.00	0.000	0.000
		Totals	60	6641.50		9374.31			Number of Loadings: 13	

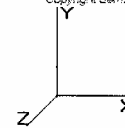
Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	No Ice		Ice		Exposed To Wind
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	138.00	(24) 1 5/8" Coax	20.00	0.00	30.00	0.00	N
0.00	130.00	(12) 1 5/8" Coax	10.00	0.00	15.00	0.00	N
0.00	105.00	(12) 1 5/8" Coax	10.00	0.00	15.00	0.00	N
0.00	95.00	(12) 1 5/8" Coax	10.00	0.00	15.00	0.00	N
0.00	80.00	(9) 1 5/8" Coax	8.00	0.00	12.00	0.00	N
0.00	80.00	(3) 7/8" Coax	1.00	0.00	2.00	0.00	N
Total Weight			6,780.00 (lb)		10,210.00 (lb)		

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Semacon Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 2



Base Elev : 0.000 (ft)

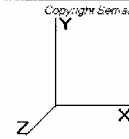
Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.5000	62.140	97.819	46.957.0	21.56	124.28	65	52	0.0
5.00		0.5000	60.740	95.597	43.829.6	21.07	121.48	65	52	1.645.4
10.00		0.5000	59.340	93.376	40.844.2	20.57	118.68	65	52	1.607.6
15.00		0.5000	57.940	91.154	37.997.5	20.08	115.88	65	52	1.569.8
20.00		0.5000	56.540	88.932	35.286.3	19.59	113.08	65	52	1.532.0
25.00		0.5000	55.140	86.710	32.707.3	19.09	110.28	65	52	1.494.2
30.00		0.5000	53.740	84.489	30.257.0	18.60	107.48	65	52	1.456.4
35.00		0.5000	52.340	82.267	27.932.3	18.11	104.68	65	52	1.418.6
40.00		0.5000	50.940	80.045	25.729.8	17.61	101.88	65	52	1.380.8
43.50	Bot - Section 2	0.5000	49.960	78.490	24.759.1	17.27	99.92	65	52	944.1
45.00		0.5000	49.540	77.824	23.646.3	17.12	99.08	65	52	754.6
49.75	Top - Section 1	0.4375	49.085	67.551	20.197.7	19.43	112.19	60	48	2.347.6
50.00		0.4375	49.015	67.453	20.110.6	19.40	112.03	60	48	57.4
55.00		0.4375	47.615	65.509	18.421.5	18.84	108.83	60	48	1.131.1
60.00		0.4375	46.215	63.565	16.829.7	18.27	105.63	60	48	1.098.0
65.00		0.4375	44.815	61.621	15.332.3	17.71	102.43	60	48	1.065.0
70.00		0.4375	43.415	59.677	13.926.5	17.14	99.23	60	48	1.031.9
75.00		0.4375	42.015	57.733	12.609.4	16.58	96.03	60	48	998.8
80.00		0.4375	40.615	55.789	11.378.1	16.02	92.83	60	48	965.7
85.00		0.4375	39.215	53.845	10.229.6	15.45	89.63	60	48	932.7
88.25	Bot - Section 3	0.4375	38.305	52.582	9.526.2	15.09	87.55	60	48	588.5
90.00		0.4375	37.815	51.901	9.161.1	14.89	86.43	60	48	537.7
93.25	Top - Section 2	0.3125	37.530	36.914	6.460.0	20.82	120.10	60	48	980.2
95.00		0.3125	37.040	36.428	6.208.2	20.65	118.53	60	48	718.4
100.0		0.3125	35.640	35.039	5.525.0	19.76	114.05	60	48	608.0
105.0		0.3125	34.240	33.651	4.893.8	18.97	109.57	60	48	584.3
110.0		0.3125	32.840	32.262	4.312.6	18.18	105.09	60	48	560.7
115.0		0.3125	31.440	30.873	3.779.4	17.39	100.61	60	48	537.1
120.0		0.3125	30.040	29.485	3.292.0	16.60	96.13	60	48	513.5
125.0		0.3125	28.640	28.096	2.848.5	15.81	91.65	60	48	489.8
130.0		0.3125	27.240	26.708	2.446.7	15.02	87.17	60	48	466.2
135.0		0.3125	25.840	25.319	2.084.6	14.23	82.69	60	48	442.6
138.0		0.3125	25.000	24.486	1.885.5	13.75	80.00	60	48	254.2
										30,212.7

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Sennan Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 3



Base Elev : 0.000 (ft)

Load Case: No Ice 120.00 mph Wind with No Ice 19 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

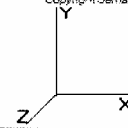
Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	αz (psf)	$\alpha z Gh$ (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 36.864	62.30 621.39 0.650	0.00	0.00	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 36.864	62.30 607.39 0.650	0.00	5.00	25.600	16.64	1.036.7	0.0	1,645.4	0.0	1,645.4
10.00		0.00	1.00 36.864	62.30 593.39 0.650	0.00	5.00	25.017	16.26	1.013.1	0.0	1,607.6	0.0	1,607.6
15.00		0.00	1.00 36.864	62.30 579.39 0.650	0.00	5.00	24.433	15.88	989.4	0.0	1,569.8	0.0	1,569.8
20.00		0.00	1.00 36.864	62.30 565.39 0.650	0.00	5.00	23.850	15.50	965.8	0.0	1,532.0	0.0	1,532.0
25.00		0.00	1.00 36.864	62.30 551.39 0.650	0.00	5.00	23.267	15.12	942.2	0.0	1,494.2	0.0	1,494.2
30.00		0.00	1.00 36.864	62.30 537.39 0.650	0.00	5.00	22.683	14.74	918.6	0.0	1,456.4	0.0	1,456.4
35.00		0.00	1.01 37.489	63.35 523.81 0.650	0.00	5.00	22.100	14.36	910.1	0.0	1,418.6	0.0	1,418.6
40.00		0.00	1.05 38.947	65.82 523.59 0.650	0.00	5.00	21.517	13.99	920.5	0.0	1,380.8	0.0	1,380.8
41.50	Bot - Section 2	0.00	1.08 39.892	67.41 519.71 0.650	0.00	3.50	14.715	9.56	644.8	0.0	944.1	0.0	944.1
45.00		0.00	1.09 40.280	68.07 517.84 0.650	0.00	1.50	6.328	4.11	280.0	0.0	754.6	0.0	754.6
49.75	Top - Section 1	0.00	1.12 41.451	70.05 511.21 0.650	0.00	4.75	19.693	12.80	896.7	0.0	2,347.6	0.0	2,347.6
50.00		0.00	1.12 41.511	70.15 520.12 0.650	0.00	0.25	1.022	0.66	46.6	0.0	57.4	0.0	57.4
55.00		0.00	1.15 42.657	72.09 512.19 0.650	0.00	5.00	20.131	13.09	943.3	0.0	1,131.1	0.0	1,131.1
60.00		0.00	1.18 43.731	73.90 503.35 0.650	0.00	5.00	19.548	12.71	939.0	0.0	1,098.0	0.0	1,098.0
65.00		0.00	1.21 44.742	75.64 493.71 0.650	0.00	5.00	18.965	12.33	912.4	0.0	1,065.0	0.0	1,065.0
70.00		0.00	1.24 45.700	77.23 483.38 0.650	0.00	5.00	18.381	11.95	922.8	0.0	1,031.9	0.0	1,031.9
75.00		0.00	1.26 46.609	78.77 472.43 0.650	0.00	5.00	17.798	11.57	911.3	0.0	998.8	0.0	998.8
80.00	Appertunance(s)	0.00	1.28 47.477	80.23 460.91 0.650	0.00	5.00	17.215	11.19	897.8	0.0	965.7	0.0	965.7
85.00		0.00	1.31 48.306	81.63 448.90 0.650	0.00	5.00	16.631	10.81	882.5	0.0	932.7	0.0	932.7
88.25	Bot - Section 3	0.00	1.32 48.827	82.51 440.84 0.650	0.00	3.25	10.497	6.82	563.0	0.0	588.5	0.0	588.5
90.00		0.00	1.33 49.102	82.98 436.42 0.650	0.00	1.75	5.642	3.67	304.3	0.0	537.7	0.0	537.7
93.25	Top - Section 2	0.00	1.34 49.602	83.82 428.08 0.650	0.00	3.25	10.268	6.69	560.5	0.0	980.2	0.0	980.2
95.00	Appertunance(s)	0.00	1.35 49.866	84.27 430.79 0.650	0.00	1.75	5.437	3.53	297.8	0.0	218.4	0.0	218.4
100.0		0.00	1.37 50.602	85.51 417.56 0.650	0.00	5.00	15.142	9.84	841.7	0.0	608.0	0.0	608.0
105.0	Appertunance(s)	0.00	1.39 51.313	86.71 403.96 0.650	0.00	5.00	14.558	9.46	820.6	0.0	584.3	0.0	584.3
110.0		0.00	1.41 51.999	87.87 390.03 0.650	0.00	5.00	13.975	9.08	798.3	0.0	560.7	0.0	560.7
115.0		0.00	1.42 52.664	89.00 375.78 0.650	0.00	5.00	13.392	8.70	774.7	0.0	537.1	0.0	537.1
120.0		0.00	1.44 53.308	90.09 361.23 0.650	0.00	5.00	12.808	8.33	750.0	0.0	513.5	0.0	513.5
125.0		0.00	1.46 53.933	91.14 346.41 0.650	0.00	5.00	12.225	7.95	724.3	0.0	489.8	0.0	489.8
130.0	Appertunance(s)	0.00	1.48 54.541	92.17 331.33 0.650	0.00	5.00	11.642	7.57	697.5	0.0	466.2	0.0	466.2
135.0		0.00	1.49 55.133	93.17 316.00 0.650	0.00	5.00	11.058	7.19	669.7	0.0	442.6	0.0	442.6
138.0	Appertunance(s)	0.00	1.50 55.480	93.76 306.69 0.650	0.00	3.00	6.355	4.13	387.3	0.0	254.2	0.0	254.2
Totals:								138.00			24,183.1	0.0	30,212.7

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Samaan Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 4



Base Elev : 0.000 (ft)

Load Case: No Ice 120.00 mph Wind with No Ice 19 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

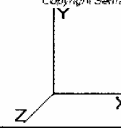
Discrete Appurtenance Segment Forces

Flev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	FMS RV65-12-XXDR1	3	47.477	80.236	0.750	12.60	0.000	0.000	1,010.97	0.00	0.00	63.00
80.00	DB844H90E-XY	3	47.477	80.236	1.000	11.16	0.000	0.000	895.43	0.00	0.00	42.00
80.00	DB844G90VTA-SX	3	47.477	80.236	1.000	9.09	0.000	0.000	729.34	0.00	0.00	34.50
80.00	PLATFORM	1	47.477	80.236	1.000	27.00	0.000	0.000	2,166.37	0.00	0.00	1,200.00
95.00	Nokia CS72993.07	6	49.866	84.274	0.670	4.94	0.000	0.000	416.70	0.00	0.00	120.00
95.00	MLA Loading 764 Sq.I	12	49.866	84.274	0.750	66.87	0.000	0.000	5,635.38	0.00	0.00	420.00
95.00	SUMMIT-TRIANTENNA	3	49.866	84.274	1.000	15.00	0.000	0.000	1,264.11	0.00	0.00	750.00
105.0	Decibel 950G65VT7F-	6	51.313	86.718	0.900	21.56	0.000	0.000	1,869.84	0.00	0.00	60.00
105.0	T-Arm	3	51.313	86.718	0.750	13.50	0.000	0.000	1,170.70	0.00	0.00	999.00
130.0	EMS RR65-18-VDPL2	6	54.541	92.175	0.750	19.60	0.000	0.000	1,806.81	0.00	0.00	93.00
130.0	PLATFORM	1	54.541	92.175	1.000	27.00	0.000	0.000	2,488.72	0.00	0.00	1,200.00
138.0	72.8" x 7.8" x 2" Pa	12	55.708	94.147	0.750	52.56	0.000	2.000	4,948.38	0.00	9,896.75	360.00
138.0	SUMMIT-14FT L.P. PL	1	55.708	94.147	1.000	35.00	0.000	2.000	3,295.15	0.00	6,590.30	1,300.00
									27,697.89			6,641.50

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Semaian Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 5



Base Elev : 0.000 (ft)

Load Case: No Ice	120.00 mph Wind with No Ice	19 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

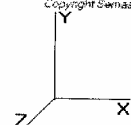
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	1,036.67	1,940.38	0.00	0.00
10.00	1,013.05	1,902.58	0.00	0.00
15.00	989.43	1,864.78	0.00	0.00
20.00	965.81	1,826.98	0.00	0.00
25.00	942.18	1,789.18	0.00	0.00
30.00	918.56	1,751.38	0.00	0.00
35.00	910.11	1,713.58	0.00	0.00
40.00	920.55	1,675.78	0.00	0.00
43.50	644.80	1,150.56	0.00	0.00
45.00	280.00	843.13	0.00	0.00
49.75	896.69	2,627.83	0.00	0.00
50.00	46.60	77.17	0.00	0.00
55.00	943.32	1,426.11	0.00	0.00
60.00	939.04	1,393.03	0.00	0.00
65.00	932.00	1,359.96	0.00	0.00
70.00	922.75	1,326.88	0.00	0.00
75.00	911.26	1,293.81	0.00	0.00
80.00	5,699.91	2,600.23	0.00	0.00
85.00	882.53	1,182.66	0.00	0.00
88.25	563.05	750.99	0.00	0.00
90.00	304.29	625.23	0.00	0.00
93.25	560.55	1,142.71	0.00	0.00
95.00	7,614.03	1,595.87	0.00	0.00
100.0	841.67	807.96	0.00	0.00
105.0	3,861.14	1,843.34	0.00	0.00
110.0	798.26	710.71	0.00	0.00
115.0	774.72	687.09	0.00	0.00
120.0	750.04	663.46	0.00	0.00
125.0	724.28	639.84	0.00	0.00
130.0	4,993.02	1,909.21	0.00	0.00
135.0	669.72	542.59	0.00	0.00
138.0	8,630.83	1,974.21	0.00	16,487.06
Totals:	51,880.97	43,634.23	0.00	16,487.06

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F
 Base Elev : 0.000 (ft)

Copyright Semacon Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 6



Load Case: No Ice 120.00 mph Wind with No Ice 19 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

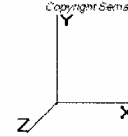
Calculated Shaft Forces and Deflections

Sea Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-51.936	-43.568	0.000	0.000	0.000	-4.799.300	0.000	0.000	0.000	0.000
5.00	-51.001	-41.502	0.000	0.000	0.000	-4.539.622	-0.077	0.000	0.077	-0.141
10.00	-50.080	-39.477	0.000	0.000	0.000	-4.284.623	-0.303	0.000	0.303	-0.285
15.00	-49.174	-37.494	0.000	0.000	0.000	-4.034.227	-0.680	0.000	0.680	-0.430
20.00	-48.284	-35.552	0.000	0.000	0.000	-3.788.360	-1.209	0.000	1.209	-0.576
25.00	-47.409	-33.651	0.000	0.000	0.000	-3.546.944	-1.893	0.000	1.893	-0.724
30.00	-46.549	-31.791	0.000	0.000	0.000	-3.309.903	-2.732	0.000	2.732	-0.873
35.00	-45.689	-29.972	0.000	0.000	0.000	-3.077.162	-3.728	0.000	3.728	-1.023
40.00	-44.800	-28.214	0.000	0.000	0.000	-2.848.717	-4.882	0.000	4.882	-1.174
43.50	-44.167	-27.019	0.000	0.000	0.000	-2.691.918	-5.783	0.000	5.783	-1.281
45.00	-43.912	-26.108	0.000	0.000	0.000	-2.625.668	-6.194	0.000	6.194	-1.326
49.75	-42.982	-23.447	0.000	0.000	0.000	-2.417.089	-7.590	0.000	7.590	-1.472
50.00	-42.969	-23.311	0.000	0.000	0.000	-2.406.343	-7.667	0.000	7.667	-1.480
55.00	-42.049	-21.792	0.000	0.000	0.000	-2.191.502	-9.306	0.000	9.306	-1.643
60.00	-41.125	-20.314	0.000	0.000	0.000	-1.981.261	-11.114	0.000	11.114	-1.804
65.00	-40.201	-18.875	0.000	0.000	0.000	-1.775.638	-13.090	0.000	13.090	-1.962
70.00	-39.278	-17.477	0.000	0.000	0.000	-1.574.637	-15.230	0.000	15.230	-2.118
75.00	-38.360	-16.120	0.000	0.000	0.000	-1.378.249	-17.531	0.000	17.531	-2.269
80.00	-32.592	-13.675	0.000	0.000	0.000	-1.186.454	-19.986	0.000	19.986	-2.413
85.00	-31.683	-12.470	0.000	0.000	0.000	-1.023.496	-22.589	0.000	22.589	-2.551
88.25	-31.100	-11.709	0.000	0.000	0.000	-920.527	-24.357	0.000	24.357	-2.639
90.00	-30.780	-11.063	0.000	0.000	0.000	-866.101	-25.333	0.000	25.333	-2.686
93.25	-30.176	-9.916	0.000	0.000	0.000	-766.067	-27.191	0.000	27.191	-2.768
95.00	-22.509	-8.654	0.000	0.000	0.000	-713.259	-28.214	0.000	28.214	-2.812
100.0	-21.647	-7.834	0.000	0.000	0.000	-600.717	-31.241	0.000	31.241	-2.962
105.0	-17.709	-6.157	0.000	0.000	0.000	-492.481	-34.420	0.000	34.420	-3.103
110.0	-16.884	-5.454	0.000	0.000	0.000	-403.939	-37.740	0.000	37.740	-3.233
115.0	-16.081	-4.781	0.000	0.000	0.000	-319.519	-41.191	0.000	41.191	-3.353
120.0	-15.299	-4.138	0.000	0.000	0.000	-239.116	-44.760	0.000	44.760	-3.458
125.0	-14.542	-3.525	0.000	0.000	0.000	-162.620	-48.429	0.000	48.429	-3.544
130.0	-9.441	-1.923	0.000	0.000	0.000	-89.910	-52.177	0.000	52.177	-3.608
135.0	-8.739	-1.420	0.000	0.000	0.000	-42.704	-55.976	0.000	55.976	-3.646
138.0	-8.631	0.000	0.000	0.000	0.000	-16.487	-58.270	0.000	58.270	-3.658

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Samaan Engineering Solutions, Inc.
 12/5/2006 4:56:09 PM
 Page: 7



Base Elev : 0.000 (ft)

Load Case: No Ice 120.00 mph Wind with No Ice 19 iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

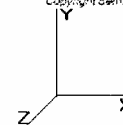
Calculated Stresses

Seg Elev (ft)	Applied Stresses						Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)				
0.00	0.45	1.07	0.00	0.00	0.00	38.69	39.18	52.0	0.0	0.754
5.00	0.43	1.08	0.00	0.00	0.00	38.33	38.81	52.0	0.0	0.747
10.00	0.42	1.08	0.00	0.00	0.00	37.93	38.39	52.0	0.0	0.739
15.00	0.41	1.09	0.00	0.00	0.00	37.48	37.94	52.0	0.0	0.730
20.00	0.40	1.09	0.00	0.00	0.00	36.98	37.43	52.0	0.0	0.720
25.00	0.39	1.10	0.00	0.00	0.00	36.43	36.87	52.0	0.0	0.709
30.00	0.38	1.11	0.00	0.00	0.00	35.82	36.24	52.0	0.0	0.697
35.00	0.36	1.12	0.00	0.00	0.00	35.13	35.55	52.0	0.0	0.684
40.00	0.35	1.13	0.00	0.00	0.00	34.36	34.77	52.0	0.0	0.669
43.50	0.34	1.13	0.00	0.00	0.00	33.78	34.18	52.0	0.0	0.658
45.00	0.34	1.14	0.00	0.00	0.00	33.51	33.91	52.0	0.0	0.652
49.75	0.35	1.28	0.00	0.00	0.00	35.79	36.20	48.0	0.0	0.755
50.00	0.35	1.28	0.00	0.00	0.00	35.73	36.15	48.0	0.0	0.754
55.00	0.33	1.29	0.00	0.00	0.00	34.51	34.97	48.0	0.0	0.728
60.00	0.32	1.30	0.00	0.00	0.00	33.15	33.54	48.0	0.0	0.699
65.00	0.31	1.31	0.00	0.00	0.00	31.62	32.01	48.0	0.0	0.667
70.00	0.29	1.33	0.00	0.00	0.00	29.91	30.29	48.0	0.0	0.631
75.00	0.28	1.34	0.00	0.00	0.00	27.98	28.35	48.0	0.0	0.591
80.00	0.25	1.18	0.00	0.00	0.00	25.80	26.13	48.0	0.0	0.545
85.00	0.23	1.19	0.00	0.00	0.00	23.90	24.22	48.0	0.0	0.505
88.25	0.22	1.19	0.00	0.00	0.00	22.55	22.87	48.0	0.0	0.477
90.00	0.21	1.20	0.00	0.00	0.00	21.78	22.09	48.0	0.0	0.461
93.25	0.27	1.65	0.00	0.00	0.00	27.12	27.53	48.0	0.0	0.574
95.00	0.24	1.25	0.00	0.00	0.00	25.93	26.25	48.0	0.0	0.547
100.00	0.22	1.25	0.00	0.00	0.00	23.81	23.93	48.0	0.0	0.499
105.00	0.18	1.06	0.00	0.00	0.00	20.99	21.26	48.0	0.0	0.443
110.00	0.17	1.05	0.00	0.00	0.00	18.74	19.00	48.0	0.0	0.396
115.00	0.15	1.05	0.00	0.00	0.00	16.19	16.45	48.0	0.0	0.343
120.00	0.14	1.05	0.00	0.00	0.00	13.29	13.56	48.0	0.0	0.283
125.00	0.13	1.04	0.00	0.00	0.00	9.96	10.25	48.0	0.0	0.214
130.00	0.07	0.71	0.00	0.00	0.00	6.10	6.29	48.0	0.0	0.131
135.00	0.06	0.70	0.00	0.00	0.00	3.23	3.50	48.0	0.0	0.073
138.00	0.00	0.71	0.00	0.00	0.00	1.33	1.81	48.0	0.0	0.038

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright: Sarnas Engineering Solutions, Inc.
 12/5/2006 4:56:10 PM
 Page: 8



Load Case: Ice 0.00 mph Wind with Ice 5 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

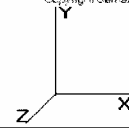
Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CTAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	26.017	31.22	0.0	189.0	1,834.4
10.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	25.433	30.52	0.0	184.6	1,792.2
15.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	24.850	29.82	0.0	180.3	1,750.1
20.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	24.267	29.12	0.0	176.0	1,708.0
25.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	23.683	28.42	0.0	171.7	1,665.9
30.00		0.00	1.00	0.000	0.000	0.000	1.200	0.50	5.00	23.100	27.72	0.0	167.4	1,623.8
35.00		0.00	1.01	0.000	0.000	0.000	1.200	0.50	5.00	22.517	27.02	0.0	163.0	1,581.6
40.00		0.00	1.05	0.000	0.000	0.000	1.200	0.50	5.00	21.933	26.32	0.0	158.7	1,539.5
43.50	Rot - Section 2	0.00	1.08	0.000	0.000	0.000	1.200	0.50	3.50	15.006	18.01	0.0	109.0	1,053.0
45.00		0.00	1.09	0.000	0.000	0.000	1.200	0.50	1.50	6.453	7.74	0.0	47.1	801.8
49.75	Top - Section 1	0.00	1.12	0.000	0.000	0.000	1.200	0.50	4.75	20.089	24.11	0.0	145.4	2,492.9
50.00		0.00	1.12	0.000	0.000	0.000	1.200	0.50	0.25	1.043	1.25	0.0	7.6	65.1
55.00		0.00	1.15	0.000	0.000	0.000	1.200	0.50	5.00	20.548	24.66	0.0	148.5	1,279.6
60.00		0.00	1.18	0.000	0.000	0.000	1.200	0.50	5.00	19.965	23.96	0.0	144.1	1,242.2
65.00		0.00	1.21	0.000	0.000	0.000	1.200	0.50	5.00	19.381	23.26	0.0	139.8	1,204.8
70.00		0.00	1.24	0.000	0.000	0.000	1.200	0.50	5.00	18.798	22.56	0.0	135.5	1,167.4
75.00		0.00	1.26	0.000	0.000	0.000	1.200	0.50	5.00	18.215	21.86	0.0	131.2	1,130.0
80.00	Apertunance(s)	0.00	1.28	0.000	0.000	0.000	1.200	0.50	5.00	17.631	21.16	0.0	126.9	1,092.6
85.00		0.00	1.31	0.000	0.000	0.000	1.200	0.50	5.00	17.048	20.46	0.0	122.5	1,055.2
88.25	Bot - Section 3	0.00	1.32	0.000	0.000	0.000	1.200	0.50	3.25	10.768	12.92	0.0	77.8	666.3
90.00		0.00	1.33	0.000	0.000	0.000	1.200	0.50	1.75	5.787	6.94	0.0	42.1	579.8
93.25	Top - Section 2	0.00	1.34	0.000	0.000	0.000	1.200	0.50	3.25	10.558	12.67	0.0	76.3	1,056.5
95.00	Apertunance(s)	0.00	1.35	0.000	0.000	0.000	1.200	0.50	1.75	5.583	6.70	0.0	40.5	258.9
100.00		0.00	1.37	0.000	0.000	0.000	1.200	0.50	5.00	15.558	18.67	0.0	111.5	719.5
105.00	Apertunance(s)	0.00	1.39	0.000	0.000	0.000	1.200	0.50	5.00	14.975	17.97	0.0	107.2	691.5
110.00		0.00	1.41	0.000	0.000	0.000	1.200	0.50	5.00	14.392	17.27	0.0	102.9	663.6
115.00		0.00	1.42	0.000	0.000	0.000	1.200	0.50	5.00	13.808	16.57	0.0	98.6	635.6
120.00		0.00	1.44	0.000	0.000	0.000	1.200	0.50	5.00	13.225	15.87	0.0	94.2	607.7
125.00		0.00	1.46	0.000	0.000	0.000	1.200	0.50	5.00	12.642	15.17	0.0	89.9	579.8
130.00	Apertunance(s)	0.00	1.48	0.000	0.000	0.000	1.200	0.50	5.00	12.058	14.47	0.0	85.6	551.8
135.00		0.00	1.49	0.000	0.000	0.000	1.200	0.50	5.00	11.475	13.77	0.0	81.3	523.9
138.00	Apertunance(s)	0.00	1.50	0.000	0.000	0.000	1.200	0.50	3.00	6.605	7.93	0.0	47.2	301.4
Totals:								138.00			0.0	3,703.6	33,916.3	

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Semaar Engineering Solutions, Inc.
 12/5/2006 4:56:10 PM
 Page: 9



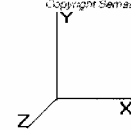
Base Elev : 0.000 (ft)

Load Case: Ice	0.00 mph Wind with Ice	5 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Discrete Appurtenance Segment Forces

Filev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	FMS RV65-12-XXDR1	3	0.000	0.000	1.000	18.58	0.000	0.000	0.00	0.00	0.00	166.44
80.00	DB844H90E-XY	3	0.000	0.000	1.000	12.87	0.000	0.000	0.00	0.00	0.00	120.90
80.00	DB844G90VTA-SX	3	0.000	0.000	1.000	10.44	0.000	0.000	0.00	0.00	0.00	114.00
80.00	PLATFORM	1	0.000	0.000	1.000	32.00	0.000	0.000	0.00	0.00	0.00	1,800.00
95.00	Nokia CS72993.07	6	0.000	0.000	0.670	5.71	0.000	0.000	0.00	0.00	0.00	270.00
95.00	MLA Loading 764 Sq.ft	12	0.000	0.000	1.000	0.00	0.000	0.000	0.00	0.00	0.00	0.00
95.00	SUMMIT-TRIANTENNA	3	0.000	0.000	1.000	22.50	0.000	0.000	0.00	0.00	0.00	1,275.00
105.0	Decibel 950G65VT7F-	6	0.000	0.000	1.000	28.10	0.000	0.000	0.00	0.00	0.00	201.48
105.0	T-Arm	3	0.000	0.000	1.000	24.30	0.000	0.000	0.00	0.00	0.00	1,299.00
130.0	EMS RR65-18-VDPL2	6	0.000	0.000	1.000	29.93	0.000	0.000	0.00	0.00	0.00	227.51
130.0	PLATFORM	1	0.000	0.000	1.000	32.00	0.000	0.000	0.00	0.00	0.00	1,800.00
138.0	72.8" x 7.8" x 2" Pa	12	0.000	0.000	1.000	0.00	0.000	2.000	0.00	0.00	0.00	0.00
138.0	SUMMIT-14FT L. P. PL	1	0.000	0.000	1.000	40.00	0.000	2.000	0.00	0.00	0.00	2,100.00
									0.00			9,374.31

Pole :	91540	Code:	TIA/EIA-222 Rev F	Copyright Siteman Engineering Solutions, Inc
Location :	Davie Public Works, FL			12/5/2006 4:56:10 PM
Height :	138.0 (ft)			Page: 10
Shape :	18 Sides			
Base Dia :	62.14 (in)			
Top Dia :	25.00 (in)			
Taper :	0.280000 (in/ft)	Base Elev :	0.000 (ft)	



Load Case: Ice	0.00 mph Wind with Ice	5 Iterations
Gust Response Factor :	1.69	
Dead Load Factor :	1.00	
Wind Load Factor :	1.00	

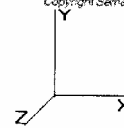
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	0.00	2,129.35	0.00	0.00
10.00	0.00	2,087.23	0.00	0.00
15.00	0.00	2,045.11	0.00	0.00
20.00	0.00	2,002.99	0.00	0.00
25.00	0.00	1,960.87	0.00	0.00
30.00	0.00	1,918.75	0.00	0.00
35.00	0.00	1,876.63	0.00	0.00
40.00	0.00	1,834.51	0.00	0.00
43.50	0.00	1,259.55	0.00	0.00
45.00	0.00	890.26	0.00	0.00
49.75	0.00	2,773.18	0.00	0.00
50.00	0.00	79.81	0.00	0.00
55.00	0.00	1,574.58	0.00	0.00
60.00	0.00	1,537.18	0.00	0.00
65.00	0.00	1,499.79	0.00	0.00
70.00	0.00	1,462.39	0.00	0.00
75.00	0.00	1,425.00	0.00	0.00
80.00	0.00	3,588.94	0.00	0.00
85.00	0.00	1,305.21	0.00	0.00
88.25	0.00	828.82	0.00	0.00
90.00	0.00	667.28	0.00	0.00
93.25	0.00	1,218.99	0.00	0.00
95.00	0.00	1,891.41	0.00	0.00
100.0	0.00	919.48	0.00	0.00
105.0	0.00	2,391.99	0.00	0.00
110.0	0.00	813.59	0.00	0.00
115.0	0.00	785.65	0.00	0.00
120.0	0.00	757.70	0.00	0.00
125.0	0.00	729.76	0.00	0.00
130.0	0.00	2,729.32	0.00	0.00
135.0	0.00	623.87	0.00	0.00
138.0	0.00	2,461.42	0.00	0.00
Totals:	0.00	50,070.61	0.00	0.00

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Seman Engineering Solutions, Inc.
 12/5/2006 4:56:10 PM
 Page: 11



Base Elev : 0.000 (ft)

Load Case: Ice 0.00 mph Wind with Ice 5 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

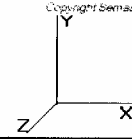
Calculated Shaft Forces and Deflections

Seq Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	0.000	-50.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5.00	0.000	-47.940	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.00	0.000	-45.853	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.00	0.000	-43.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.00	0.000	-41.805	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25.00	0.000	-39.844	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30.00	0.000	-37.926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35.00	0.000	-36.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40.00	0.000	-34.214	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
43.50	0.000	-32.955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45.00	0.000	-32.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
49.75	0.000	-29.292	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50.00	0.000	-29.212	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55.00	0.000	-27.637	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60.00	0.000	-26.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65.00	0.000	-24.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70.00	0.000	-23.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
75.00	0.000	-21.713	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80.00	0.000	-18.124	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85.00	0.000	-16.819	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
88.25	0.000	-15.990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90.00	0.000	-15.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
93.25	0.000	-14.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.00	0.000	-12.212	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	-11.293	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	-8.901	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	-8.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	-7.302	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	-6.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	-5.814	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	-3.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	-2.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
138.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Sema Engineering Solutions, Inc.
 12/5/2006 4:56:10 PM
 Page: 12



Base Elev : 0.000 (ft)

Load Case: Ice 0.00 mph Wind with Ice 5 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

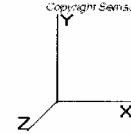
Calculated Stresses

Seg Elev (ft)	Applied Stresses						Combined (ksi)	Allowable Stress (Fb) (ksi)		
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)				
0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.51	52.0	0.0	0.010
5.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50	52.0	0.0	0.010
10.00	0.49	0.00	0.00	0.00	0.00	0.00	0.49	52.0	0.0	0.009
15.00	0.48	0.00	0.00	0.00	0.00	0.00	0.48	52.0	0.0	0.008
20.00	0.47	0.00	0.00	0.00	0.00	0.00	0.47	52.0	0.0	0.009
25.00	0.46	0.00	0.00	0.00	0.00	0.00	0.46	52.0	0.0	0.009
30.00	0.45	0.00	0.00	0.00	0.00	0.00	0.45	52.0	0.0	0.009
35.00	0.44	0.00	0.00	0.00	0.00	0.00	0.44	52.0	0.0	0.008
40.00	0.43	0.00	0.00	0.00	0.00	0.00	0.43	52.0	0.0	0.008
43.50	0.42	0.00	0.00	0.00	0.00	0.00	0.42	52.0	0.0	0.008
45.00	0.41	0.00	0.00	0.00	0.00	0.00	0.41	52.0	0.0	0.008
49.75	0.43	0.00	0.00	0.00	0.00	0.00	0.43	48.0	0.0	0.009
50.00	0.43	0.00	0.00	0.00	0.00	0.00	0.43	48.0	0.0	0.009
55.00	0.42	0.00	0.00	0.00	0.00	0.00	0.42	48.0	0.0	0.009
60.00	0.41	0.00	0.00	0.00	0.00	0.00	0.41	48.0	0.0	0.009
65.00	0.40	0.00	0.00	0.00	0.00	0.00	0.40	48.0	0.0	0.008
70.00	0.39	0.00	0.00	0.00	0.00	0.00	0.39	48.0	0.0	0.008
75.00	0.38	0.00	0.00	0.00	0.00	0.00	0.38	48.0	0.0	0.008
80.00	0.32	0.00	0.00	0.00	0.00	0.00	0.32	48.0	0.0	0.007
85.00	0.31	0.00	0.00	0.00	0.00	0.00	0.31	48.0	0.0	0.007
88.25	0.30	0.00	0.00	0.00	0.00	0.00	0.30	48.0	0.0	0.006
90.00	0.30	0.00	0.00	0.00	0.00	0.00	0.30	48.0	0.0	0.006
93.25	0.38	0.00	0.00	0.00	0.00	0.00	0.38	48.0	0.0	0.008
95.00	0.34	0.00	0.00	0.00	0.00	0.00	0.34	48.0	0.0	0.007
100.00	0.32	0.00	0.00	0.00	0.00	0.00	0.32	48.0	0.0	0.007
105.00	0.26	0.00	0.00	0.00	0.00	0.00	0.26	48.0	0.0	0.006
110.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	48.0	0.0	0.005
115.00	0.24	0.00	0.00	0.00	0.00	0.00	0.24	48.0	0.0	0.005
120.00	0.22	0.00	0.00	0.00	0.00	0.00	0.22	48.0	0.0	0.005
125.00	0.21	0.00	0.00	0.00	0.00	0.00	0.21	48.0	0.0	0.004
130.00	0.12	0.00	0.00	0.00	0.00	0.00	0.12	48.0	0.0	0.002
135.00	0.10	0.00	0.00	0.00	0.00	0.00	0.10	48.0	0.0	0.002
138.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.0	0.0	0.000

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Sensen Engineering Solutions, Inc.
 12/5/2006 4:56:10 PM
 Page: 13



Load Case: Twist/Sway 50.00 mph Wind with No Ice 18 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

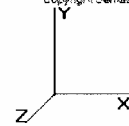
Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	258.91	0.650	0.00	0.000	0.00	0.0	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	253.08	0.650	0.00	5.00	25.600	16.64	180.0	0.0	1,645.4
10.00		0.00	1.00	6.400	10.81	247.25	0.650	0.00	5.00	25.017	16.26	175.9	0.0	1,607.6
15.00		0.00	1.00	6.400	10.81	241.41	0.650	0.00	5.00	24.433	15.88	171.8	0.0	1,569.8
20.00		0.00	1.00	6.400	10.81	235.58	0.650	0.00	5.00	23.850	15.50	167.7	0.0	1,532.0
25.00		0.00	1.00	6.400	10.81	229.75	0.650	0.00	5.00	23.267	15.12	163.6	0.0	1,494.2
30.00		0.00	1.00	6.400	10.81	223.91	0.650	0.00	5.00	22.683	14.74	159.5	0.0	1,456.4
35.00		0.00	1.01	6.509	10.99	219.92	0.650	0.00	5.00	22.100	14.36	158.0	0.0	1,418.6
40.00		0.00	1.05	6.762	11.42	218.16	0.650	0.00	5.00	21.517	13.99	159.8	0.0	1,380.8
43.50	Rot - Section 2	0.00	1.08	6.926	11.70	216.54	0.650	0.00	3.50	14.715	9.56	111.9	0.0	944.1
45.00		0.00	1.09	6.993	11.81	215.76	0.650	0.00	1.50	6.328	4.11	48.6	0.0	754.6
49.75	Top - Section 1	0.00	1.12	7.196	12.16	213.00	0.650	0.00	4.75	19.693	12.80	155.7	0.0	2,347.6
50.00		0.00	1.12	7.207	12.17	216.71	0.650	0.00	0.25	1.022	0.66	8.1	0.0	57.4
55.00		0.00	1.15	7.406	12.51	213.41	0.650	0.00	5.00	20.131	13.09	163.8	0.0	1,131.1
60.00		0.00	1.18	7.592	12.83	209.73	0.650	0.00	5.00	19.548	12.71	163.0	0.0	1,098.0
65.00		0.00	1.21	7.768	13.12	205.71	0.650	0.00	5.00	18.965	12.33	161.8	0.0	1,065.0
70.00		0.00	1.24	7.934	13.40	201.41	0.650	0.00	5.00	18.381	11.95	160.2	0.0	1,031.9
75.00		0.00	1.26	8.092	13.67	196.84	0.650	0.00	5.00	17.798	11.57	158.2	0.0	998.8
80.00	Apertunance(s)	0.00	1.28	8.242	13.93	192.05	0.650	0.00	5.00	17.215	11.19	155.9	0.0	965.7
85.00		0.00	1.31	8.387	14.17	187.04	0.650	0.00	5.00	16.631	10.81	153.2	0.0	932.7
88.25	Bot - Section 3	0.00	1.32	8.477	14.32	183.68	0.650	0.00	3.25	10.497	6.82	97.8	0.0	588.5
90.00		0.00	1.33	8.525	14.40	181.84	0.650	0.00	1.75	5.642	3.67	52.8	0.0	537.7
93.25	Top - Section 2	0.00	1.34	8.611	14.55	178.37	0.650	0.00	3.25	10.288	6.69	97.3	0.0	980.2
95.00	Apertunance(s)	0.00	1.35	8.657	14.63	179.49	0.650	0.00	1.75	5.437	3.53	51.7	0.0	218.4
100.0		0.00	1.37	8.785	14.84	173.98	0.650	0.00	5.00	15.142	9.84	146.1	0.0	608.0
105.0	Apertunance(s)	0.00	1.39	8.908	15.05	168.31	0.650	0.00	5.00	14.558	9.46	142.5	0.0	584.3
110.0		0.00	1.41	9.028	15.25	162.51	0.650	0.00	5.00	13.975	9.08	138.6	0.0	560.7
115.0		0.00	1.42	9.143	15.45	156.57	0.650	0.00	5.00	13.392	8.70	134.5	0.0	537.1
120.0		0.00	1.44	9.255	15.64	150.51	0.650	0.00	5.00	12.808	8.33	130.2	0.0	513.5
125.0		0.00	1.46	9.363	15.82	144.34	0.650	0.00	5.00	12.225	7.95	125.7	0.0	489.8
130.0	Apertunance(s)	0.00	1.48	9.469	16.00	138.05	0.650	0.00	5.00	11.642	7.57	121.1	0.0	466.2
135.0		0.00	1.49	9.572	16.17	131.66	0.650	0.00	5.00	11.058	7.19	116.3	0.0	442.6
138.0	Apertunance(s)	0.00	1.50	9.632	16.27	127.78	0.650	0.00	3.00	6.355	4.13	67.2	0.0	254.2
Totals:								138.00			4,198.5	0.0	30,212.7	

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Semacon Engineering Solutions, Inc.
 12/5/2006 4:56:11 PM
 Page: 14



Base Elev : 0.000 (ft)

Load Case: Twist/Sway 50.00 mph Wind with No Ice 18 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

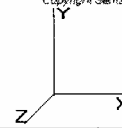
Discrete Appurtenance Segment Forces

Filev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (\$f)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	FMS RV65-12-XXDRI	1	8.242	13.930	0.750	12.60	0.000	0.000	175.52	0.00	0.00	63.00
80.00	DB844H90E-XY	3	8.242	13.930	1.000	11.16	0.000	0.000	155.46	0.00	0.00	42.00
80.00	DB844G90VTA-SX	3	8.242	13.930	1.000	9.09	0.000	0.000	126.62	0.00	0.00	34.50
80.00	PLATFORM	1	8.242	13.930	1.000	27.00	0.000	0.000	376.11	0.00	0.00	1,200.00
95.00	Nokia CS72993.07	6	8.657	14.631	0.670	4.94	0.000	0.000	72.34	0.00	0.00	120.00
95.00	MLA Loadina 764 Sa.I	12	8.657	14.631	0.750	66.87	0.000	0.000	978.36	0.00	0.00	420.00
95.00	SUMMIT-TRI ANTENNA	3	8.657	14.631	1.000	15.00	0.000	0.000	219.46	0.00	0.00	750.00
105.0	Decibel 950G65VTZF.	6	8.908	15.055	0.900	21.56	0.000	0.000	324.62	0.00	0.00	60.00
105.0	T-Arm	3	8.908	15.055	0.750	13.50	0.000	0.000	203.25	0.00	0.00	999.00
130.0	EMS RR65-18-VDPL2	6	9.469	16.003	0.750	19.60	0.000	0.000	313.68	0.00	0.00	93.00
130.0	PLATFORM	1	9.469	16.003	1.000	27.00	0.000	0.000	432.07	0.00	0.00	1,200.00
138.0	72.8" x 7.8" x 2" Pa	12	9.672	16.345	0.750	52.56	0.000	2.000	859.09	0.00	1,716.19	360.00
138.0	SUMMIT-14FT L. P. PL	1	9.672	16.345	1.000	35.00	0.000	2.000	572.08	0.00	1,144.15	1,300.00
									4,808.66			6,641.50

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Samsan Engineering Solutions, Inc
 12/5/2006 4:56:11 PM
 Page: 15



Base Elev : 0.000 (ft)

Load Case: Twist/Sway 50.00 mph Wind with No Ice 18 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

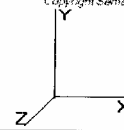
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	179.98	1,940.38	0.00	0.00
10.00	175.88	1,902.58	0.00	0.00
15.00	171.78	1,864.78	0.00	0.00
20.00	167.67	1,826.98	0.00	0.00
25.00	163.57	1,789.18	0.00	0.00
30.00	159.47	1,751.38	0.00	0.00
35.00	158.01	1,713.58	0.00	0.00
40.00	159.82	1,675.78	0.00	0.00
43.50	111.95	1,150.56	0.00	0.00
45.00	48.61	843.13	0.00	0.00
49.75	155.68	2,627.83	0.00	0.00
50.00	8.09	72.17	0.00	0.00
55.00	163.77	1,426.11	0.00	0.00
60.00	163.03	1,393.03	0.00	0.00
65.00	161.82	1,350.96	0.00	0.00
70.00	160.20	1,326.88	0.00	0.00
75.00	158.20	1,293.81	0.00	0.00
80.00	989.57	2,600.23	0.00	0.00
85.00	153.22	1,182.66	0.00	0.00
86.25	97.75	750.99	0.00	0.00
90.00	52.83	625.23	0.00	0.00
93.25	97.32	1,142.71	0.00	0.00
95.00	1,321.88	1,595.87	0.00	0.00
100.0	146.12	807.96	0.00	0.00
105.0	670.34	1,843.34	0.00	0.00
110.0	138.59	710.71	0.00	0.00
115.0	134.50	687.09	0.00	0.00
120.0	130.22	663.46	0.00	0.00
125.0	125.74	639.84	0.00	0.00
130.0	866.84	1,909.21	0.00	0.00
135.0	116.27	542.59	0.00	0.00
138.0	1,498.41	1,974.21	0.00	2,862.34
Totals:	9,007.11	43,634.23	0.00	2,862.34

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Samaan Engineering Solutions, Inc
 12/5/2006 4:56:11 PM
 Page: 16



Load Case: Twist/Sway 50.00 mph Wind with No Ice 18 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

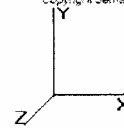
Calculated Shaft Forces and Deflections

Seq Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-9.017	-43.632	0.000	0.000	0.000	-833.627	0.000	0.000	0.000	0.000
5.00	-8.854	-41.688	0.000	0.000	0.000	-788.545	-0.013	0.000	0.013	-0.025
10.00	-8.694	-39.782	0.000	0.000	0.000	-744.276	-0.053	0.000	0.053	-0.049
15.00	-8.537	-37.913	0.000	0.000	0.000	-700.805	-0.118	0.000	0.118	-0.075
20.00	-8.383	-36.083	0.000	0.000	0.000	-658.119	-0.210	0.000	0.210	-0.100
25.00	-8.231	-34.290	0.000	0.000	0.000	-616.205	-0.329	0.000	0.329	-0.126
30.00	-8.082	-32.536	0.000	0.000	0.000	-575.049	-0.475	0.000	0.475	-0.152
35.00	-7.933	-30.819	0.000	0.000	0.000	-534.638	-0.648	0.000	0.648	-0.178
40.00	-7.779	-29.141	0.000	0.000	0.000	-494.972	-0.948	0.000	0.948	-0.204
43.50	-7.670	-27.989	0.000	0.000	0.000	-467.744	-1.005	0.000	1.005	-0.223
45.80	-7.626	-27.144	0.000	0.000	0.000	-456.240	-1.076	0.000	1.076	-0.231
49.75	-7.464	-24.515	0.000	0.000	0.000	-420.019	-1.319	0.000	1.319	-0.256
50.00	-7.462	-24.441	0.000	0.000	0.000	-418.152	-1.332	0.000	1.332	-0.257
55.00	-7.303	-23.012	0.000	0.000	0.000	-380.841	-1.617	0.000	1.617	-0.285
60.00	-7.143	-21.616	0.000	0.000	0.000	-344.326	-1.931	0.000	1.931	-0.313
65.00	-6.983	-20.254	0.000	0.000	0.000	-308.610	-2.274	0.000	2.274	-0.341
70.00	-6.824	-18.925	0.000	0.000	0.000	-273.693	-2.646	0.000	2.646	-0.368
75.00	-6.665	-17.629	0.000	0.000	0.000	-239.575	-3.046	0.000	3.046	-0.394
80.00	-5.663	-15.034	0.000	0.000	0.000	-206.251	-3.473	0.000	3.473	-0.419
85.00	-5.506	-13.850	0.000	0.000	0.000	-177.935	-3.925	0.000	3.925	-0.443
88.25	-5.405	-13.099	0.000	0.000	0.000	-160.041	-4.233	0.000	4.233	-0.459
90.00	-5.349	-12.473	0.000	0.000	0.000	-150.582	-4.402	0.000	4.402	-0.467
93.25	-5.245	-11.330	0.000	0.000	0.000	-133.197	-4.725	0.000	4.725	-0.481
95.00	-3.912	-9.744	0.000	0.000	0.000	-124.018	-4.903	0.000	4.903	-0.489
100.0	-3.763	-8.936	0.000	0.000	0.000	-104.456	-5.429	0.000	5.429	-0.515
105.0	-3.079	-7.098	0.000	0.000	0.000	-85.640	-5.982	0.000	5.982	-0.539
110.0	-2.936	-6.387	0.000	0.000	0.000	-70.246	-6.559	0.000	6.559	-0.562
115.0	-2.796	-5.701	0.000	0.000	0.000	-55.567	-7.159	0.000	7.159	-0.583
120.0	-2.661	-5.038	0.000	0.000	0.000	-41.585	-7.780	0.000	7.780	-0.601
125.0	-2.529	-4.399	0.000	0.000	0.000	-28.281	-8.418	0.000	8.418	-0.616
130.0	-1.642	-2.499	0.000	0.000	0.000	-15.634	-9.070	0.000	9.070	-0.627
135.0	-1.520	-1.957	0.000	0.000	0.000	-7.423	-9.730	0.000	9.730	-0.634
138.0	-1.498	0.000	0.000	0.000	0.000	-2.862	-10.129	0.000	10.129	-0.636

Pole : 91540
 Location : Davie Public Works, FL
 Height : 138.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.14 (in)
 Top Dia : 25.00 (in)
 Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Seman Engineering Solutions, Inc
 12/5/2006 4:56:11 PM
 Page: 17



Base Elev : 0.000 (ft)

Load Case: Twist/Sway 50.00 mph Wind with No Ice 18 Iterations
 Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

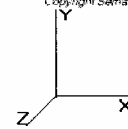
Calculated Stresses

Seq Elev (ft)	Applied Stresses						Combined (ksi)	Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)				
0.00	0.45	0.19	0.00	0.00	0.00	6.72	7.17	52.0	0.0	0.138
5.00	0.44	0.19	0.00	0.00	0.00	6.66	7.10	52.0	0.0	0.137
10.00	0.43	0.19	0.00	0.00	0.00	6.59	7.02	52.0	0.0	0.135
15.00	0.42	0.19	0.00	0.00	0.00	6.51	6.93	52.0	0.0	0.133
20.00	0.41	0.19	0.00	0.00	0.00	6.42	6.84	52.0	0.0	0.132
25.00	0.40	0.19	0.00	0.00	0.00	6.33	6.73	52.0	0.0	0.130
30.00	0.39	0.19	0.00	0.00	0.00	6.22	6.62	52.0	0.0	0.127
35.00	0.37	0.19	0.00	0.00	0.00	6.10	6.49	52.0	0.0	0.125
40.00	0.36	0.20	0.00	0.00	0.00	5.97	6.34	52.0	0.0	0.122
43.50	0.36	0.20	0.00	0.00	0.00	5.87	6.23	52.0	0.0	0.120
45.00	0.35	0.20	0.00	0.00	0.00	5.82	6.18	52.0	0.0	0.119
49.75	0.36	0.22	0.00	0.00	0.00	6.22	6.59	48.0	0.0	0.137
50.00	0.36	0.22	0.00	0.00	0.00	6.21	6.58	48.0	0.0	0.137
55.00	0.35	0.22	0.00	0.00	0.00	6.00	6.36	48.0	0.0	0.133
60.00	0.34	0.23	0.00	0.00	0.00	5.76	6.11	48.0	0.0	0.127
65.00	0.33	0.23	0.00	0.00	0.00	5.50	5.84	48.0	0.0	0.122
70.00	0.32	0.23	0.00	0.00	0.00	5.20	5.53	48.0	0.0	0.115
75.00	0.31	0.23	0.00	0.00	0.00	4.86	5.18	48.0	0.0	0.108
80.00	0.27	0.20	0.00	0.00	0.00	4.49	4.77	48.0	0.0	0.099
85.00	0.26	0.21	0.00	0.00	0.00	4.16	4.43	48.0	0.0	0.092
88.25	0.25	0.21	0.00	0.00	0.00	3.92	4.19	48.0	0.0	0.087
90.00	0.24	0.21	0.00	0.00	0.00	3.79	4.04	48.0	0.0	0.084
93.25	0.31	0.29	0.00	0.00	0.00	4.71	5.05	48.0	0.0	0.105
95.00	0.27	0.22	0.00	0.00	0.00	4.51	4.79	48.0	0.0	0.100
100.00	0.26	0.22	0.00	0.00	0.00	4.11	4.38	48.0	0.0	0.091
105.00	0.21	0.18	0.00	0.00	0.00	3.65	3.87	48.0	0.0	0.081
110.00	0.20	0.18	0.00	0.00	0.00	3.26	3.47	48.0	0.0	0.072
115.00	0.18	0.18	0.00	0.00	0.00	2.82	3.02	48.0	0.0	0.063
120.00	0.17	0.18	0.00	0.00	0.00	2.31	2.50	48.0	0.0	0.052
125.00	0.16	0.18	0.00	0.00	0.00	1.73	1.91	48.0	0.0	0.040
130.00	0.09	0.12	0.00	0.00	0.00	1.06	1.17	48.0	0.0	0.024
135.00	0.08	0.12	0.00	0.00	0.00	0.56	0.67	48.0	0.0	0.014
138.00	0.00	0.12	0.00	0.00	0.00	0.23	0.31	48.0	0.0	0.007

Pole : 91540
Location : Davie Public Works, FL
Height : 138.0 (ft)
Shape : 18 Sides
Base Dia : 62.14 (in)
Top Dia : 25.00 (in)
Taper : 0.280000 (in/ft)

Code: TIA/EIA-222 Rev F

Copyright Seman Engineering Solutions, Inc.
12/5/2006 4:56:11 PM
Page: 18



Base Elev : 0.000 (ft)

Analysis Summary

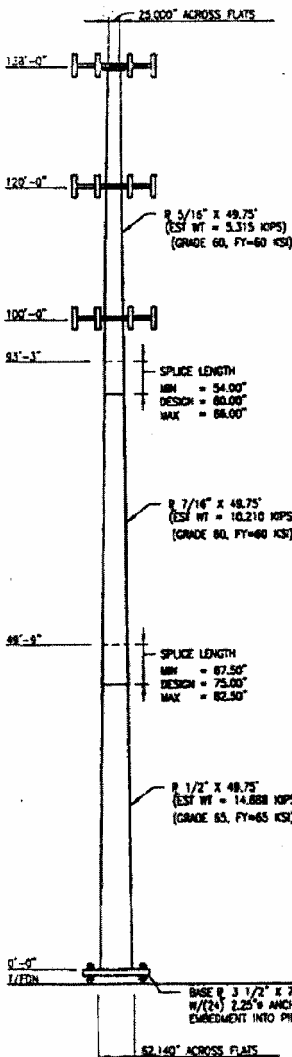
Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	51.9	0.00	43.57	0.00	0.00	4799.30	39.18	52.0	0.00	0.754
Ice	0.0	0.00	50.07	0.00	0.00	0.00	0.51	52.0	0.00	0.010
Twist/Sway	9.0	0.00	43.63	0.00	0.00	833.63	7.17	52.0	0.00	0.138

SUMMIT MANUFACTURING INC.

225 KIMWIS BOULEVARD, WEST HAZELTON, PA 18201
PHONE: (717) 454-8730 E-MAIL: SUMMITLGP@POL.NET
FAX: (717) 454-5948 WEB: HTTP://WWW.SUMMITMFG.COM



PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 221-0166 www.PJFweb.com



JOB DATA			
Page 1 of 1	Job No.	29297-718	
By KJS	Design No.	SUMMIT JOB #29272	
Chkd By KJS	Date	11-07-1997	
Pole 140-FT POLE	Rev. No.	Rev. Date	
Site DADE & BROWARD COUNTIES, FL 87910518			
Owner OMNIPONT			
Ref No			
Design SEE LOAD CASES (BELOW)			

Due to regional and/or local code requirements, this design does not incorporate a one third (1/3) increase in allowable stresses.

LOAD CASES			
CASE 1	115 MPH / 110 MPH WITH 1/2" ICE	TIA/EIA 222-F	
CASE 2	110 MPH WIND	SOUTH FLORIDA BUILDING CODE	
CASE 3	150 MPH WINDS	ASCE 7-95	

MONOPOLE HAS BEEN DESIGNED TO MEET THE MINIMUM WIND VELOCITY REQUIREMENTS OF EACH OF THE THREE DESIGN STANDARDS LISTED ABOVE. REFER TO PAGE ONE OF THE CALCULATIONS FOR A COMPARISON OF THE THREE DESIGN STANDARDS.

POLE SPECIFICATIONS	
Pole Shape Type:	18-SIDED POLYGON
Taper:	0.280000 IN/FT
Shaft Steel:	ASTM A607 GRADE 60 & GRADE 85
Base PL Steel:	ASTM A572 GRADE 50 (50 KSI)
Anchor Bolts:	2 1/4" x 8'-0" LONG #18J ASTM A615 GRADE 75

ANTENNA LIST		
No.	Elev.	Description
-	TOP	5/8" LIGHTNING ROD
1-12	138.00	(12) DAPA 58000 PCS PANEL
-	138.00	14' LOW PROFILE PLATFORM
13-24	120.00	(12) DAPA 58000 PCS PANEL
-	120.00	14' LOW PROFILE PLATFORM (CLAMP ON)
25-36	100.00	(12) DAPA 58000 PCS PANEL
-	100.00	14' LOW PROFILE PLATFORM (CLAMP ON)

STEP BOLTS FULL HEIGHT.
ANTENNA FEED LINES RUN INSIDE OF POLE.

Elevation	115 MPH WIND		50 MPH WIND	
	Lateral Deflection (inches)	Rotation (sway) (degrees)	Lateral Deflection (inches)	Rotation (sway) (degrees)
TOP	57.9	3.589	10.7	0.667

SHAFT SECTION DATA					
Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches)	
1	49.75	0.3125	60.00	@ Top	@ Bottom
2	49.75	0.4375	75.00	25.000	38.510
3	49.75	0.5000		38.905	50.835
				48.210	62.140

UNFACTORED BASE REACTIONS

MOMENT = 4365 ft-kips
SHEAR = 46.5 kips
AXIAL = 35 kips